Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal

Section 1. General administrative information

Assess Limiting Factors Of The Lake Roosevelt White Sturgeon Population

Bonneville project number, if an ongoing project 9502700

Business name of agency, institution or organization requesting funding
Spokane Tribe of Indians

Business acronym (if appropriate) STOI

Proposal contact person or principal investigator:

Name Keith Underwood
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Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
Washington Dept. of Fish and Wildlife	P.O. Box 999	Battleground, WA 98604	John Devore

NPPC Program Measure Number(s) which this project addresses.
10.4A.1, 10.4A.2, 10.4A.6, 10.4A.9

NMFS Biological Opinion Number(s) which this project addresses.
N/A

Other planning document references.
N/A

Subbasin.
Upper Columbia River

Short description.
Three year base-line assessment of white sturgeon in Lake Roosevelt from Grand Coulee Dam to the international border, including the Spokane River arm on the Spokane Indian Reservation.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
	Anadromous fish		Construction		Watershed
X	Resident fish		O & M		Biodiversity/genetics
	Wildlife		Production	X	Population dynamics
	Oceans/estuaries	*	Research		Ecosystems
	Climate	X	Monitoring/eval.		Flow/survival
	Other		Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement		Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.
White Sturgeon, Life History, Fish Distribution

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9404300	Lake Roosevelt Moitoring / Data Collection Program	Management plan developed under the LRMDCP will depend on findings of this project.

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Conduct baseline investigations of population dynamics of white sturgeon in Lake Roosevelt, WA.	a	Define population characteristics of white sturgeon including: age/length frequencies, mortality and recruitment rates, distribution,

			habitat use, and abundance
		b	Assess environmental factors affecting abundance of white strurgeon and the potential for artificial propogation.

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	1/1999	1/2001	99.99%
			TOTAL 99.99%

Schedule constraints.
Definition and refinement of collection methods which will be most successful within Lake Roosevelt will be necessary to effectively collect the necessary data.

Completion date.
2001

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel	Project Manager, Biologist, Technician	$71,000
Fringe benefits	28% of salaries	$19,880
Supplies, materials, non-expendable property	set lines, misc. field, office, lab	$5,000
Operations & maintenance	Insurance	$3,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	2 computers	$6,000
PIT tags	# of tags: 100	$ 290
Travel		$5,000
Indirect costs	21.3% of contract less capital	$22,188
Subcontracts		$131,642
Other		
TOTAL		$264,000

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	$264,000	$264,000		
O&M as % of total	0.00%	0.00%		

Section 6. Abstract

Sturgeon populations throughout the Columbia River Basin have been shown to be declining, possibly as a result of dam construction and hydropower operation. Research and surveys concerning sturgeon status are directly called for in the 1994 Columbia Basin Fish and Wildlife Program (Section 10.4A). The status of white sturgeon in Lake Roosevelt is currently unknown. This program will define population characteristics of white sturgeon in Lake Roosevelt which will assist in future management decisions. Population characteristics of particular interest include age/length frequencies, mortality and recruitment rates, distribution, habitat use, and abundance. This program will also examine the relationship between environmental factors and sturgeon survival and examine the feasibility of artificial propagation as a management strategy. This project is expected to be completed three years after initiation of sampling, and should provide solid baseline data regarding sturgeon in Lake Roosevelt.

Section 7. Project description

a. Technical and/or scientific background.

As described in Section 10.4A of the 1994 FWP, concern has arisen over the declining status of native sturgeon populations within the Columbia River Basin. Sections 10.4A.1, 10.4A.2, 10.4A.6 and 10.4A.9 of the FWP specifically address the need for collection of baseline data on sturgeon populations within the basin. The proposed work will provide baseline data necessary to make informed management decisions concerning white sturgeon in the upper Columbia River.

Declining sturgeon populations are thought to be related, in part, to dam construction and hydro-ops. This project will also provide data necessary to the development of biological and integrated rule curves as called for in Section 10.8B.5 of the FWP. Rule curves will be constructed as part of the Lake Roosevelt Monitoring / Data Collection Program (BPA 9404300).

b. Proposal objectives.

Objective: Conduct baseline investigations of population dynamics of white sturgeon in Lake Roosevelt, WA.

Measurable objectives include estimates of the following population parameters and characteristics:

Populations size, age/length frequency, recruitment and mortality rates, distribution patterns, life history, habitat use, environmental factors affecting abundance and an assessment of the potential for artificial propagation. Product(s) will include annual and completion reports to the funding agency.

c. Rationale and significance to Regional Programs.

As described in Section 10.4A of the 1994 FWP, concern has arisen over the declining status of native sturgeon populations within the Columbia River Basin. Sections 10.4A.1, 10.4A.2, 10.4A.6 and 10.4A.9 of the FWP specifically address the need for collection of baseline data on sturgeon populations within the basin including Lake Roosevelt. This project directly addresses the data needs related to white sturgeon in Lake Roosevelt as called for in the FWP. This project will also provide data necessary to the development of biological and integrated rule curves as called for in Section 10.8B.5 of the FWP. Rule curves will be constructed as part of the Lake Roosevelt Monitoring / Data Collection Program (BPA 9404300).

d. Project history

N.A.

e. Methods.

Assumptions associated with sampling procedures are that suitable methods can be determined to effectively sample juvenile, subadult and adult sturgeon from Lake Roosevelt. Methodologies previously utilized within the Columbia River are described in Beamesderfer and Nigro (1993a and 1993b) and Setter and Brannon (1992). This program will utilize collection methods described by these authors however, revised or alternate methodologies may be developed if current methods prove ineffective in Lake Roosevelt. Collection methods commonly used for sturgeon include set-lines, hook and line, trawling and D-ring net collections. Gillnets are also used in the Snake River Reservoirs to effectively sample juvenile and subadult sturgeon (Thomas Cichosz, Spokane Tribe of Indians, personal experience).

f. Facilities and equipment.

The Spokane Tribal Fisheries Department has sufficient facilities and equipment to conduct the work described in this proposal. The STOI is also the primary contractor for the Lake Roosevelt Monitoring / Data Collection Program (BPA 9404300), which has been underway under various project names since 1988. Equipment and facility needs for these two projects will overlap, and therefore they can be effectively shared by both programs. Facilities and equipment currently utilized by the LRMDCP are described further in the corresponding proposal.

g. References.

Beamesderfer, R.C. and Nigro, A.A. 1993a. Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam. Final Report, Volume I, July 1986-September 1992. DE-AI79-86BP63584, Bonneville Power Administration, Portland, Oregon.

Beamesderfer, R.C. and Nigro, A.A. 1993b. Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam. Final Report, Volume II, July 1986-September 1992. DE-AI79-86BP63584, Bonneville Power Administration, Portland, Oregon.

NPPC. 1994. Columbia River Basin fish and wildlife program. Northwest Power Planning Council, Portland, Oregon.

Setter, A. and E. Brannon. 1992. A summary of stock identification research on white sturgeon of the Columbia River (1985-1990). Final Report January 1985-July 1991. DE-A179-89BP97298, Bonneville Power Administration, Portland, Oregon.

Section 8. Relationships to other projects

This program will be related to the following programs in that all aim to improve or supplement the Lake Roosevelt fishery as directed under the resident fish section(s) of the 1994 FWP.

The Lake Roosevelt Monitoring / Data Collection Program (BPA No. 9404300)
Spokane Tribal Hatchery (BPA No. 9104600)
Sherman Creek Hatchery (BPA No. 9104700)
Lake Roosevelt Net Pen Project (BPA No. 9500900)
The Habitat Improvement Project (BPA No. 9001800)
Chief Joseph Kokanee Enhancement Project (BPA No. 9501100)
Lake Roosevelt Kokanee Net Pen Project (Proposal)
Native Fish Stock Status (NPPC No. 10.8B.26).

Section 9. Key personnel

Keith Underwood, Program Manager, Lake Roosevelt Monitoring / Data Collection Program (see resume in proposal for BPA 9404300);

Thomas Cichosz, Fisheries Biologist II, Lake Roosevelt Monitoring / Data Collection Program (see resume in proposal for BPA 9404300);

Section 10. Information/technology transfer

Results of this program will be reported in program specific annual reports to BPA. Results may also be presented in oral or poster format at public and/or professional venues.